CLAIMS

Wha'   is:

1. A   ⅃ of digital FM demodulator , comprising:

modulation signal to the delay lines with multiple output;

output signal from the multiple output delay lines;

he delayed signal phase with original modulation signal and

e each compared phase difference;

mulated phase difference is quantized into one or more bit digital

nother set of digital signal based on the above accumulated

ial;

tput signal from the multiple output delay lines according to

generated in step-e;

phase comparison and accumulation in step-c and quantization

digital accumulation in step-e and re-select output signal from

output delay lines in step-f, again the step-c,d,e,f;

cycle of step c-d-e-f, there is one set of digital signal pass to

and filter out the quantized noise by way of a low-pass filter to

inal modulation signal.

2. /   (of digital FM demodulator as claimed in claim 1, wherein said

           :o could convert into voltage or current waveform for

           :nd quantization.

3. /   J of digital FM demodulator , comprising:

           :nodulation signal by digital controlled delay lines;

           : delayed rising or falling edge of modulation signal with   the

           :dulation signal by phase detector to generate the phase-

           :hase-lagging pulse signal;

           :hase difference of said two pulse into voltage level and

           :pacitor, the voltage difference accumulated in capacitor is

           : phase difference accumulation;

           : capacitor voltage into one or more bit digital signal;

           :accumulate the digital signal by digital integrator to generate

           : of digital signal;

           :ut signal of digital integrator into the digital controlled delay

           :rol the delay time of delayed modulation signal;

           :f step b,c,d,e to accumulate a digital signal will generate

           :of digital signal which will filter out the high frequency

           :nise by a low-pass filter to get original modulation signal.

4.   ! of digital FM demodulator , comprising:

           :trolled delay lines used to delay input modulation signal;

:tor to generate phase-leading or phase-lagging signal

. rising or falling edge of delayed modulation signal

:h original modulation signal;

ore the accumulation voltage difference, said accumulated

⌐ the accumulation of the phase difference;

 e or more bit digital signal from capacitor voltage;

:ator to accumulate the said above digital signal to generate

f digital signal;

:l signal from said integrator to delay lines to control the

.lelayed modulation signal;

.hich output signal been filter our by a low-pass filter to get

ιodulation signal.

5.   f digital FM demodulator as claimed in claim 4, wherein said

l delay lines comprising delay units, multiplexer, and

ɔutput of delay unit is relative to each input of multiplexer and

:f each delay unit is the same; the input digital signal after

select the corresponding output signal of multiplexer;

:elay time of digital controlled delay lines is determined by

··ιal.

6.   ɔf digital FM demodulator as claimed in claim 4, wherein the

··:gital integrator need a trigger signal that could use input

' directly; said phase detector will compare the rising edge of

̶gnal and delayed modulation signal and using the falling

̶ ̶ quantizer and integrator.

7. ̶ ̶ ̶ ̶digital FM demodulator as claimed in claim 4, wherein the

̶ ̶ ̶ be one or more bit analog-to-digital converter and one bit

age comparator.

8. ̶ ̶ ̶ ̶ ̶digital FM demodulator as claimed in claim 4, wherein the

integrator use same bit number and one bit integrator is a